

Patent
Attorney's Docket No. 030681-248

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Hang-woo LEE et al.

Application No.: 09/695,253

Filed: October 25, 2000

For: **TRIODE FIELD EMISSION
DISPLAY USING CARBON
NANOTUBES**

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REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the non-final Office Action of November 21, 2003, Applicants respectfully request reconsideration of the above-captioned application.

The Office Action repeats a rejection of claims 3 and 4 under 35 U.S.C. § 102(b) as allegedly being anticipated by the Jager patent (U.S. Patent No. 6,107,733) and a rejection of claims 1 and 2 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Jager patent in view of the Keesman et al. patent (U.S. Patent No. 5,773,921). These rejections are respectfully traversed.

In the Response to Arguments section beginning at page 4, the Office acknowledges Applicants' arguments that the Jager patent does not teach or suggest an extraction electrode which upon selective biasing acts to extract electrons away from impinging on the phosphor formed on the anode, noting that the Jager patent discloses focusing strips that



create a focusing effect for the electrons emitted by the cathode to impinge on the phosphor layer and further there is no teaching of extraction of electrons away from the phosphor layer. The Office further identifies a passage at column 6, lines 1-3 of the Jager patent which states, "[t]he more the biasing potential of the focusing strips is lower than the minimum biasing potential of the cathode, the more the focusing effect is significant." Applicants respectfully disagree, however, with the Office's conclusion based on this sentence that the focusing strips are "considered to induce extraction electrons away from impinging on the phosphor layer, up to some degree, when the biasing potential of the focusing strip is closer to the minimum biasing potential of the cathode."

The quoted language at Column 6, lines 1-3, actually states that the focusing effect is more significant as the negative potential increases in magnitude, meaning that more of the electrons impinge upon the phosphor, but this does not mean that at smaller negative values, the electrons are extracted by the focusing strips. Column 4, lines 23-27 and 64-67, states that the biasing of these strips to the minimum biasing potential of the cathode creates an electric field *driving back* the electrons emitted by the microtips to have a focusing effect on the electrons towards strips 9 supporting the phosphor elements. In this way, a portion of the electrons that would likely have bombarded the insulating layer 8 are focused on the phosphor, but there are nevertheless some electrons that do in fact hit the insulating layer, as disclosed at column 4, lines 27-37. Hence, it is clear that the focusing effect is to prevent electrons from hitting the insulating layer covering the focusing strips by driving onto the phosphor layer. This is further supported by the passages at column 6, lines 3-9, where it is stated that providing the sufficiently negative potential drives the

electrons *back from the interval separating the two strips* of the phosphor elements. Also, the Jager patent discusses suppressing color drift phenomenon observed on the conventional screens.

All these passages, when taken in context, indicate that the quoted language in the Office Action indicates that there are no *extraction* electrodes formed in a striped pattern parallel to the anode lines and upon selective biasing *act to extract electrons away* from impinging on the phosphor formed on the anode. Stated differently, the focusing strips as disclosed in the Jager patent are negatively biased or biased at a zero potential, as indicated throughout the Jager patent including column 3, lines 15 and 16. A negative potential would repel electrons, not attract them or extract them. A zero potential would also not "act to extract electrons."

Insofar as both rejections were based on the understanding of the Jager patent as identified above, it is respectfully submitted that both rejections should be withdrawn based on the foregoing comments.

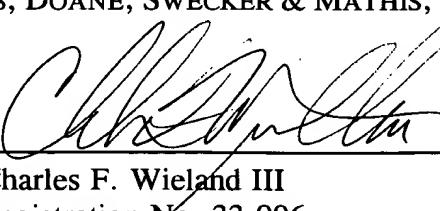
Applicants respectfully request reconsideration and allowance of the above-captioned application. Should any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date:

By:


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Hang-woo LEE et al.

Application No.: 09/695,253

Filing Date: October 25, 2000

Title: TRIODE FIELD EMISSION DISPLAY
USING CARBON NANOTUBES

Group Art Unit: - 2879

Examiner: Mariceli Santiago

Confirmation No.: 2631

AMENDMENT/REPLY TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed is a reply for the above-identified patent application.

A Petition for Extension of Time is also enclosed.

Terminal Disclaimer(s) and the \$55.00 (2814) \$110.00 (1814) fee per Disclaimer due under 37 C.F.R. § 1.20(d) are also enclosed.

Also enclosed is/are _____

Small entity status is hereby claimed.

Applicant(s) requests continued examination under 37 C.F.R. § 1.114 and enclose the \$385.00 (2801) \$770.00 (1801) fee due under 37 C.F.R. § 1.17(e).

Applicant(s) requests that any previously unentered after final amendments not be entered. Continued examination is requested based on the enclosed documents identified above.

Applicant(s) previously submitted _____

on _____, for which continued examination is requested.

Applicant(s) requests suspension of action by the Office until at least _____, which does not exceed three months from the filing of this RCE, in accordance with 37 C.F.R. § 1.103(c). The required fee under 37 C.F.R. § 1.17(i) is enclosed.

A Request for Entry and Consideration of Submission under 37 C.F.R. § 1.129(a) (1809/2809) is also enclosed.

No additional claim fee is required.
 An additional claim fee is required, and is calculated as shown below.

AMENDED CLAIMS					
	No. of Claims	Highest No. of Claims Previously Paid For	Extra Claims	Rate	Additional Fee
Total Claims		MINUS =	0	x \$18.00 (1202) =	\$ 0.00
Independent Claims		MINUS =	0	x \$86.00 (1201) =	\$ 0.00
If Amendment adds multiple dependent claims, add \$290.00 (1203)					
Total Claim Amendment Fee					\$ 0.00
<input type="checkbox"/> Small Entity Status claimed - subtract 50% of Total Claim Amendment Fee					\$ 0.00
TOTAL ADDITIONAL CLAIM FEE DUE FOR THIS AMENDMENT					\$ 0.00

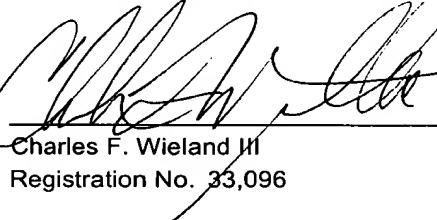
A check in the amount of _____ is enclosed for the fee due.
 Charge _____ to Deposit Account No. 02-4800.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17, 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By


Charles F. Wieland III
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Date: February 24, 2004